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10/523,326	02/01/2005	Matthias Marke	3717483-00023	5780

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EXAMINER	
COLUCCI, MICHAEL C	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,326	MARKE ET AL.	
	Examiner	Art Unit	
	MICHAEL C. COLUCCI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/21/2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 09/21/2010 have been fully considered but they are not persuasive.

Argument (pages 5-6):

- The combined references fail to teach "determining if error concealment was performed".

Response to argument:

Examiner disagrees and maintains the prior art. Examiner looks to the specification for clearer understanding of determining if error concealment was performed, wherein Examiner finds that "*The AMR speech decoder (2) uses the BFI (Bad Frame Indicator), to not convert unusable frames directly into speech (audio signal) but in this case to synthesize the data containing the useful information from frames from the past such that the human ear only perceives a minimal disturbance (error concealment). A PCM (Pulse Code Modulation) signal is present at the output of the module (2). The source-decoded audio signal is investigated for characteristic features of error concealment which allow it to be concluded on decoding in the time window investigated that there is a 20 sufficiently great likelihood of error concealment having been used*" (Present invention spec. pages 4-5).

Therefore, Examiner understands that investigating characteristic features such as a minimal disturbance directs to determining if error concealment was performed.

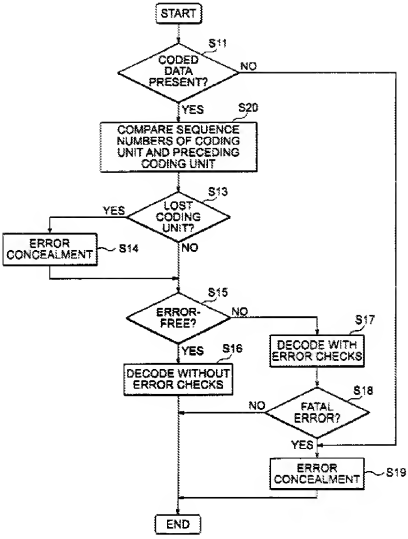
Further, Examiner finds that the specification reveals "*The error concealment means that the signal has few acoustic noise components but has taken the frequency-modulated information from a speech frame of the past and can thus not be utilized at the current point in time*" (Present invention spec. page 5).

Therefore, Examiner understands that investigating characteristic features such as a minimal disturbance via few acoustic noise components, directs to determining if error concealment was performed.

Given this interpretation, consider that Makinen teaches a method of error-concealment, according to the present invention. As the encoded bit stream is received at step 160, the frame is checked to see if it is corrupted at step 162. If the frame is not corrupted, then the parameter history of the speech sequence is updated at step 164, and the speech parameters of the current frame are decoded at step 166. The procedure then goes back to step 162. If the frame is bad or corrupted, the parameters are retrieved from the parameter history storage at step 170. Whether the corrupted frame is part of the stationary speech sequence or non-stationary speech sequence is determined at step 172. If the speech sequence is stationary, the LTP-lag of the last good frame is used to replace the LTP-lag in the corrupted frame at step 174. If the speech sequence is non-stationary, a new lag value and new gain value are calculated based on the LTP history at step 180, and they are used to replace the corresponding parameters in the corrupted frame at step 182 (Makinen Col. 11 lines 30-47 & Fig. 4 elements 170 & 174).

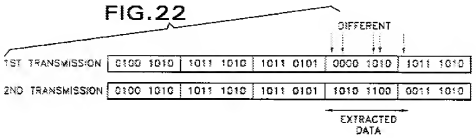
It is therefore clear that Makinen teaches error concealment based on past data. however, consider the teachings of Fukunaga which teaches a first error concealment and a second error concealment. Fukunaga teaches the coding unit is flagged as containing an error, the decoding-error detection and correction unit 106 checks each field of the coded data (step S17), detects errors, corrects any detected errors if possible, and decides whether a serious uncorrectable decoding error is left (step S18). If there are no errors left, or only minor errors, the decoded data are output to the moving-picture output unit 103. If a serious or fatal error is left, the first error-concealment unit 107 carries out error concealment (step S19). The first error-concealment unit 107 also carries out error concealment (step S19) if the decoding unit 102 finds dummy data in step S11. (Fukunaga Col. 8 lines 17-28 & Fig. 5).

FIG. 5



Further, Fukunaga teaches that errors tend to occur in bursts, as shown in FIG. 22, in which a burst of errors occurs in the fourth byte and the first bit of the fifth byte. When the data are retransmitted, the data extraction unit 901 notes the differences occurring at these bit positions, and extracts the indicated nine-bit segment. Outside the nine-bit segment in FIG. 22, since the same data have been received twice, it is highly probable that the received data are correct, and the decoding unit 902 and data

selection unit 804 can take this high probability into account in performing error handling, error concealment, and data selection (Col. 21 lines 53-67 and Fig. 20 & 22).



Therefore, Examiner believes that modifying Fukunaga to include the error concealment of Makinen, at element S14 for instance, would allow a second error concealment to take place at element S19, such as by taking into account the difference of the error concealment performed at step S14, wherein *few acoustic noise components* reveal *characteristic features of error concealment* such as Fig. 22 of Fukunaga (merely 0000). In other words, if the error concealment was performed at element S14 by Makinen (i.e. usage of good frames from the frame history data), then *information from frames from the past such that the human ear only perceives a minimal disturbance* may have been substituted (i.e. a good frame). Silence could be inserted, such as a series of 0000 bits which would replace corruption or a very noisy frame. If this is detected at element S18, this means that errors are still present from a prior concealment (i.e. a previous silence/good frame is no longer effective for concealing noise) and reconcealment would be performed only on the bits/bytes that are an ineffective concealment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 14-16 and 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makinen et al US 6968309 B1 (herein after Makinen) in view of Chu et al US 6721707 B1 (herein after Chu) and further in view of Fukunaga US 6530055 B1 (hereinafter Fukunaga).

Re claims 14-16 and 25, Makinen teaches a method for evaluating data containing useful information (Col. 13 line 34-46) received via a communication network (Col. 6 line 24-41)

determining if the error concealment was performed (Col. 11 lines 30-47 & Fig. 4) by evaluating and at least partially correcting (Col. 2 line 11-21), via a channel decoder (Makinen Col. 1- line 1-27), the data received

forwarding, via the channel decoder (Fig. 1), to a speech decoder (Col. 12 line 60-67) the data with characteristics of supplementary information (Fig. 4 '162') representing the data

(Supplementary information is construed as additional information gained from the signal such as whether or not errors/corruption are present within a frame of data from the speech)

decoding the data via the speech decoder (Col. 12 line 60-67) and, where necessary, performing error concealment (Col. 2 line 22-40 & fig. 2)

forwarding the data to a text (Col. 8 line 20-30) telephony receiver (Col. 12 line 1-11 & fig. 6 '330') via the speech decoder

generating, via the demodulator (Col. 12 line 1-11 & fig. 6 '330'), reliability information (fig. 4 & Col. 10 line 28-44) relating to the data received

(Reliability information is construed as the likelihood, probability, or even prediction that data will be properly decoded with no corruption/errors. Reliable information from a frame of speech is that long term predictions even when corrupted, have a high probability of being correctly predicted)

via a demodulator (Col. 12 line 1-11 & fig. 6 '330') in the text telephony receiver (Col. 12 line 1-11 & fig. 6 '330').

forwarding the data, via the demodulator (Col. 12 line 1-11 & fig. 6 '330'), with the reliability information (Fig. 4 & Col. 10 line 28-44) to an error correction (Col. 2 line 11-21) modulator (Col. 11 line 48-67)

correcting the data received, via the error correction (Col. 2 line 11-21) modulator (Col. 11 line 48-67), taking into account the reliability information (fig. 4 & Col. 10 line 28-44)

However, Makinen fails to teach evaluating the data received and analyzing the data statistically (Chu Col. 6 lines 54-67),

Chu teaches a signal processed during data communication that includes a statistical analysis unit for generating data and the frequency of errors. Chu also teaches that the statistical analysis includes bit error rate and energy level transmission between states. Chu teaches a link impairment monitor unit 300 observes the audio data signal on the return link of the data communication channel 231 for the presence of data transmission errors that are indicative of the presence of a link impairment. In particular, assuming that the two signal processors 200 and 205 are in the bypass mode and exchange compressed audio data information, the link impairment monitor unit 300 will observe each frame of compressed audio data information and control information for possible corruption of the data that is protected by parity or by any other suitable error detection scheme. When errors are detected, a statistical analysis is performed and the results of this analysis are stored in a data structure 302.

Further, Chu teaches energy level during negotiation (assuming bypass negotiation takes advantage/uses the energy profile). (19) The control unit 220 also comprises link error response unit 304 that is operative to react to the detection of a transmission error by the link impairment monitor unit 300, in dependence on the history of statistics maintained by the link impairment monitor unit 300 in the data structure 302. The link error response unit 304 also includes a data structure 306 that contains data elements representative of the operating condition(s) to be met to allow the signal processor 200 to switch to the bypass mode. The following is a non-limiting list of

possible operating conditions: (20) Maximum number of bit errors during a certain time frame in the handshaking process; (21) A maximal time period allowed for completing a bypass handshaking procedure; (22) The minimal number of error-free control messages that must be exchanged during the handshaking procedure to consider the procedure successful; (23) Requiring a particular signal characteristic (such as energy level in the signal exchanged during the handshaking procedure).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention error concealment involving evaluating and analyzing data statistically. Statistical analysis allows for an increased probability when computing a decision in a data stream, where error concealment may be difficult to detect. by using statistical means to detect error concealment, data can be processed faster and/or carefully by allocating a specific threshold of probability. Having statistically analysis increases the chances of transmission error detection on a frame by frame basis, where a probability can be in the form of energy (i.e. variance, standard deviation, etc).

However, Makinen in view of Chu fails to teach *determining if error concealment was performed*

Fukunaga teaches that in a sound transmission system, the coding units are, for example, audio frames representing a sound segment with a fixed duration. The position of an audio frame refers to its position on the time axis, rather than its spatial position. The fifth embodiment, which corrects the positions of coding units, is

applicable to coded sound data, with the term `position` indicating position on the time axis (Fukunaga Col. 22 lines 32-38).

Further, referring to Fig. 5, Fukunaga teaches an initial error concealment operation S14, wherein S15 checks for errors after concealment, if an error is confirmed as S18, error concealment is applied once again at S19. Therefore, units S15 and S18 check to see if error concealment was performed (i.e. whether it was performed correctly on a frame). In step S13 if data is not lost the initial error concealment may not be performed where units S15 and S18 check to see if error concealment was performed based on if an error is still present. If an error is still present, error concealment was not performed, since even if the operation or error concealment was initiated, it may have failed at step S15 or S18 (Fukunaga Fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Makinen in view of Chu to incorporate determining if error concealment was performed as taught by Fukunaga to allow for a reconcealment method to check on how dependable an initial error concealment is and whether error concealment was in fact performed correctly (Fukunaga Fig. 5), wherein error reconcealment is performed on audio frames to eliminate errors due to concealment (such as by inserting silence i.e. 0000 bits to eliminate noise thereby producing a gap in audio) (Fukunaga Col. 21 lines 53-67 and Fig. 20 & 22)

Re claim 18, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein the data is analyzed in a mobile station (Col. 5 line 51-67).

Re claim 19, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein the data is transmitted over a cellular (Fig. 6 '330') mobile communication network (Col. 12 line 12-43).

Re claim 20, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein for statistical (Chu Col. 11 line 24-35) detection of an error concealment (Col. 2 line 22-40 & fig. 2) by the speech decoder (Col. 12 line 60-67), time segments of frames (Col. 1 line 25-37) of the received useful information are analyzed.

Re claim 21, Makinen teaches a method for evaluating data containing useful information as claimed in claim 20, wherein the time segments (Col. 1 line 25-37) are analyzed in a text telephony demodulator (Col. 11 line 48-67).

Re claim 22, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein the error correction (Col. 2 line 11-21)

modulator is located in (fig. 6 '340') the text (Col. 8 line 20-30) telephony receiver (Col. 12 line 1-11 & fig. 6 '330').

Re claim 23, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein the data is encoded with Adaptive Multi Rate (Col. 2 line 22-40).

Re claim 24, Makinen teaches a method for evaluating data containing useful information as claimed in claim 14, wherein the useful information includes at least one of text, speech (Col. 8 line 20-30), picture and video signals.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makinen et al US 6968309 B1 (herein after Makinen) in view of Chu et al US 6721707 B1 (herein after Chu) and Fukunaga US 6530055 B1 (hereinafter Fukunaga) further in view of Johnson US 6366578 B1 (herein after Johnson).

Re claim 17, Makinen in view of Chu and Fukunaga fail to teach a method for evaluating data containing useful information as claimed in claim 14, wherein the data is emergency call-related data (Johnson Col. 56 line 1-12).

Johnson teaches a multiple mode voice and data communication system with language capabilities, where backup communications using channels implement a telephone coupled for emergency voice calls or the like.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention data containing emergency call related data. Having an error concealment scheme for emergency related calls allows for an optimized system, that can has the ability to process data faster to reduce a discrepancy during the communication of an emergency or any time essential situation.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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